



## European Hornet

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### Plants Attacked

Lilac, boxwood, viburnum, fruit trees, birch, willow, poplar, ligustrum, rhododendron, dogwood and other trees and shrubs.

### Description of Damage

European hornets (*Vespa crabo*) girdle smaller twigs and gnaw holes in the bark of larger branches to feed on the sap that flows from the wound (Fig. 1). Some of the bark fibers may be used for nest construction. Other insects, such as flies and sap beetles, may also be attracted to the wounds to collect sap, sometimes in large numbers.



Figure 1. European hornet girdling a twig (Louis-Michel Nageleisen, Département de la Santé des Forêts, Bugwood.org).

Girdled twigs may try to regrow, causing an abnormal swelling above the wound, but often the portion of the twig above the girdled area dies. Affected twigs and branches may show premature browning of the leaves in August and September before death. Plant damage is most extensive in late summer and early fall, when large colonies have developed and many workers are actively damaging host trees and shrubs. Although the damage becomes most noticeable in the fall, European hornets may

have been removing bark and collecting sap for a month or longer.

### Identification

The European hornet is a stout insect approximately 1 inch (2.5 cm) long (Fig. 2). The head and thorax are reddish-brown and hairy. The abdomen is yellow with brownish markings similar to those found on yellow jackets. The eyes and jaws are large. The wings are reddish-orange. The European hornet somewhat resembles the cicada killer wasp but is more robust and has more hair on the thorax and abdomen.

These hornets have a large, stout stinger and a large venom sac. Their sting can be very painful, but they do not appear to be particularly aggressive or vicious unless defending their nest.



Figure 2. Adult European hornet (Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org).

These hornets are attracted to bright light at night, sometimes flying repeatedly into screens and glass windows with an audible impact.

## Life History

European hornets build nests in protected areas such as hollow trees, hollow posts, partitions in sheds, barns, porches, and attics. The hornets construct the nests out of a papery material made by chewing wood and plant fibers. Mature nests generally consist of 6-8 horizontal combs. Nests in protective cavities or sheltered areas usually lack the papery outer covering found on nests in more exposed locations. European hornet nests in the southern US can be very large, up to 2-3 feet (0.6-0.9 m) in length, 20 inches (0.5 m) in diameter, and may contain 800-1000 workers. Most nests in Virginia are much smaller due to colder winter weather.

European hornet nests are annual, and the colony dies out with winter temperatures. Fertilized queens overwinter in protected areas such as under dead logs. A single queen establishes a new nest in the spring. New nests are built each year; old nests from the previous year are not reused. At first the nest is small with only a few workers, but it grows in size over the summer.

## Control

If European hornets are found damaging the bark of trees or shrubs, bifenthrin can be sprayed on the bark to protect against further damage following the label recommendations.

Attempt to locate the hornet nest by following hornets in flight back to the nest. At night, a wasp and hornet spray that shoots from a safe distance can be used and aim the spray into the nest entrance. Use a flashlight with a red light to limit attraction by the hornets and wear protective clothing to protect against stings. European hornets are active at night and will defend their nest.

Thoroughly soak the nest. Large nests may require several applications over time. Wait a day or two after the first application to see if the nest activity continues and if another application is warranted. Another control option is to apply an insecticidal dust in the nest entrance. In several days the dust will spread throughout the colony, killing the hornets.

## Remarks

The northern giant hornet (*Vespa mandarinia*) was found in North America in 2019. No northern giant hornets have been found outside a small area in Washington State or across the border in British Columbia, Canada since 2021. The northern giant hornet looks similar to the European hornet and there have been many instances of people misidentifying European hornets as northern giant hornets based on pictures and misleading information found online. This species is not known to occur in other parts of North America at this time.

In addition, yellow-legged hornets (*Vespa velutina*) were discovered in Georgia and South Carolina in the area around Savannah in 2023. Yellow-legged hornet belongs to the same genus as European hornet and northern giant hornet (*Vespa* spp.), but it has a much darker head capsule and thorax compared to the other two species.

## Revised

Theresa A. Dellinger, December 1, 2023.

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2023

2911-1422 (ENTO-576NP)